

# Ordeals: An economic vindication of Ancient Indian 'Non-sense'

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January 2015

# Overview

- Introduction
- Leeson's theory of ordeals
- Texts
- The extended Leeson model
- Conclusions

# Introduction I

- *divyam* (most common), *daivam* (showing God's involvement as does the Latin term *iudicium Dei*)
- *śapathaḥ* (meaning both “oath” and “ordeal”)
- Manu 8.115: a defendant who successfully completed an ordeal
  - “should be judged innocent by reason of his oath”
  - *sa jñeyaḥ śapathe śuciḥ*

# Introduction II

- Derrett (1978) tries a physiological vindication
- Indologist Lariviere (1981) stresses the belief of ordeal administrators and ordeal takers
- Economist Peter Leeson (2012):  
The officials responsible for the ordeal separate innocent and guilty people.
  - Innocent people undergo the ordeal and guilty people do not.
  - Accused need to be sufficiently convinced that ordeals correctly allocate innocence and guilt.
  - Ordeal officer himself
    - does not believe in the ordeal,
    - but manipulates the ordeal so that most of them are successfully passed.
  - not iudicium Dei, but iudicium cleri

# Leeson's theory of ordeals I

## setup

- An accuser is accused of a misdeed (not having paid back a loan).
- Choice:
  - refusal to undergo the ordeal and implicitly confess wrongdoing
  - acceptance of ordeal so that
    - his innocence may be confirmed or
    - he is found guilty
- Ordeal punishment *OP* should typically be larger than the non-ordeal punishment *NOP*.

# Leeson's theory of ordeals II

no problem for very strong belief

Very strong belief on the defendant's part that ordeal can find out whether he is innocent or not.

- If innocent, he will choose to undergo the ordeal and expect to receive zero punishment rather than suffering the non-ordeal punishment.
- If the accused is guilty, he declines the ordeal because the non-ordeal punishment is smaller than the ordeal punishment which he expects for sure.

# Leeson's theory of ordeals III

risky decision in case of weak belief

## Weak belief on the defendant's part

- An ordeal taker is cleared for one out of two reasons:
  - ① God will possibly reveal his innocence (probability  $\rho$ ).
  - ② The ordeal's outcome is managed (manipulated) by the ordeal officer.

The defendant assumes a positive acquittal probability  $\alpha$ .

From the defendant's point of view, his success depends on a mixture of 1. and 2.

- The ordeal will clear the guilty defendant with a lower probability than the innocent defendant, from defendant's point of view.

# Leeson's theory of ordeals IV

separating outcome

Depending on

- the punishments  $OP$  and  $NOP$
- the strength of belief in the ordeal  $\rho$
- the assumed acquittal probability  $\alpha$

it may well happen that

- the innocent defendant voluntarily submits to the ordeal
- while the guilty one does not.

The stronger the belief in the ordeal, the more likely such a “separating” outcome.



# Leeson's theory of ordeals V

formal model

Ordeal choice by innocent accused if

$$\rho \cdot 0 + (1 - \rho) \alpha \cdot 0 + (1 - \rho) (1 - \alpha) \cdot OP < NOP$$

or

$$\frac{NOP}{OP} > (1 - \rho) (1 - \alpha)$$

No ordeal by guilty accused if

$$\rho \cdot OP + (1 - \rho) \alpha \cdot 0 + (1 - \rho) (1 - \alpha) \cdot OP > NOP$$

or

$$\frac{NOP}{OP} < \rho + (1 - \rho) (1 - \alpha)$$

Separation in case of

$$(1 - \rho) (1 - \alpha) < \frac{NOP}{OP} < \rho + (1 - \rho) (1 - \alpha)$$

# Leeson's theory of ordeals VI

## Leeson's mistake

Leeson identifies acquittal probability  $\alpha$  with probands' historical success rate  $\sigma$ . However, (in the long run, in equilibrium),

$$\begin{aligned}\sigma &= \gamma [(1 - \rho) \alpha] + (1 - \gamma) [\rho + (1 - \rho) \alpha] \\ &= (1 - \rho) \alpha + \rho (1 - \gamma)\end{aligned}$$

where  $\gamma$  equals the percentage of guilty ordeal takers. Note also

$$\alpha = \frac{\sigma - \rho (1 - \gamma)}{1 - \rho}, \rho < 1$$

with  $\frac{\partial \alpha}{\partial \sigma} > 0$ .

Thus, the larger  $\sigma$ , the higher the probability for ordeal taking. This is also argued for by Leeson, despite the above mistake.

# Leeson's theory of ordeals VII

the long run

- $\rho = 1 \rightarrow \gamma = 0 \rightarrow \sigma = 1$
- $\sigma = 1$ 
  - $\alpha = 1$  and  $\gamma = 0$   
unlikely case: benevolent officer lets some guilty hazard the ordeal
  - $\alpha = 1$  and  $\rho = 0$   
everyone succeeds (no separating outcome)
  - $\gamma = 0$  and  $\rho = 1$   
ordeals are *iudicia Dei*
- $\sigma < 1$  (some innocent accused are considered guilty)

# Leeson's theory of ordeals V

## important features of ordeals

- A. Ordeal if agreed by defendant, only
- B. High success rate
- C. Manipulability
- D. Ordeal for doubtful matters, only
- E. Ordeal strengthened by rituals
- F. Non-application for nonbelievers

Three additional points (not addressed by Leeson) gleaned from Indian sources

- G. Ordeal for serious offences, only
- H. Negative consequences for accuser in case of success
- I. Ordeal if agreed by accuser, only

## Lekhapaddhati-Lekhapañcāśīkā:

- “O Varuṇa, you protector of people, the self of all life, o Lord. Save [me who is] innocent, o just one; make me sink [if] guilty”
- *varuṇa tvam prajāpālaḥ sarvajīvātmakaḥ prabho śuddhaṃ tāraya dharmmātman aśuddhaṃ majjayasva mām*

## Nārada:

- “If he drops the iron ball out of fear, but appears to be unburned, he must carry it again.”
- Water and poison ordeals not to be inflicted on weak persons (women, sick, elderly)
- Nārada forbids the holy-water ordeal for people that are guilty with a high a-priori probability, i.e., those that are :
  - accused of grave offenses (*mahāparādhe*)
  - devoid of righteousness (*nirdharme*)
  - ungrateful (*kṛtaghne*)

- Nārada (on doubtful matters):  
If payment cannot be obtained by any other means (document, witness, timely reminder, indirect proof), a creditor can try to make the debtor undergo ordeals.
- Nārada (on serious offences):  
*mahāparādhe divyāni dāpayet tu mahīpatiḥ*
- Pitāmaha (on non-believers):  
“By the wise, the holy water is not to be given to liquor drinkers, women, immoral people, or players, and also not those living an atheist life [to those it should not be given]”.

### Yājñavalkyasmṛti:

- “O Varuṇa, protect me by truth”
- *satyena mā 'bhirakṣa tvam varuṇa*

### Lekhapaddhati-Lekhapañcāśīkā

- “Dharma wins, not adharma, truth wins, not untruth, patience wins, not anger, Viṣṇu wins, not the demons”
- *dharmo jayati nādharmah satyaṃ jayati nāṅṛtaṃ / kṣamā jayati na krodho viṣṇur jayati nāsurāḥ*



- Nārada:
  - “with the consent of the plaintiff, not otherwise”
  - *vādino' numatena nānyathā*
- Yājñavalkyasmṛti:
  - “The balance, fire, . . . are for serious accusations provided the accuser agrees to undergo punishment.”
  - locative absolutus *śīrṣakasthe 'bhiyoktari* where *śīrṣaka* means “head, helmet, verdict”
- Divyatattva: “The phrase “agrees to undergo punishment” refers to the head, the most important, the crown and fourth part of a legal proceeding wherein the victory, the defeat and the punishment is indicated.”

# The extended Leeson model I

We distinguish four cases:

- 1 Both agree to the ordeal.
  - Ordeal is undertaken.
  - The accuser will be punished with  $OP_A$  if the defendant is cleared.
- 2 Only the defendant agrees.
  - Complaint inconsequential.
- 3 Only accuser agrees.
  - Defendant is punished with  $-NOP_D$ .
- 4 Neither defendant nor accuser agrees.
  - Defendant is punished with  $NOP_D$ .
  - Accuser is neither punished nor does he obtain his claims  $C_A$ .

# The extended Leeson model II

- The best outcome for each agent is his agreeing to the ordeal while the other rejects the ordeal.
- Typical outcome: one agent agrees to the ordeal while the other does not. Then, the ordeal does not take place, contributing to ordeals being applied in rare cases, only.
- Both agents agree to the ordeal (which is then carried out)
  - if the ordeal punishments for the agents are relatively small
  - if the innocent party believes strongly in the ordeal
  - if the guilty party does not believe strongly.

# The extended Leeson model IV

## game theoretic analysis I

		accuser	
		agree	not agree
def.	agree	$(0, -OP_A)$ , clearance $(-OP_D, C_A)$ , no clearance	$(0, 0)$
	not ag.	$(-NOP_D, C_A)$	$(-NOP_D, 0)$

Note:

- If one does not agree, the other should agree.
- ...

# The extended Leeson model IV

## game theoretic analysis II

Note:

- If accuser agrees, the innocent defendant should agree if

$$\frac{NOP_D}{OP_D} > (1 - \rho)(1 - \alpha) \quad (1)$$

holds

- If defendant agrees, the guilty accuser should agree if

$$[\rho + (1 - \rho)\alpha] \cdot (-OP_A) + [1 - \rho - (1 - \rho)\alpha] \cdot C_A > 0$$

or

$$\frac{C_A}{OP_A} > \frac{\rho + (1 - \rho)\alpha}{1 - \rho - (1 - \rho)\alpha} \quad (6)$$

# The extended Leeson model IV

## game theoretic analysis III

### Four cases:

- (1) and (6) hold  
agree a dominant strategy for both
- (1) holds, (6) does not hold  
defendant has agree as a dominant strategy, accuser will not agree
- (1) does not holds, (6) holds  
accuser has agree as a dominant strategy, defendant will not agree
- neither (1) nor (6) hold  
one agrees, the other does not (game of chicken)

# Conclusions I

- What about the sequential model where the defendant has to announce his agreement first?
- Many important law texts have some sections on ordeals. Notable exceptions are the dharmasūtras due to Baudhāyana and Vasiṣṭha and also the Arthaśāstra.
- Schlagintweit (1866) reports Indian and other cases of ordeals in the late 18th century and mid 19th century and Lariviere has evidence of ordeals being carried out in the 20th century.

# Conclusions II

- Lariviere contra Leeson?
  - Leeson: “priestly manipulation of ordeals is not incompatible with priestly faith in ordeals as genuine iudicia Dei. According to the developing doctrine of in persona Christi, priests may have believed that they were acting in the person of Christ –that is, that God was guiding them – when they manipulated ordeals.”
  - Changing odds in favor of the ordeal takers could have been a long process.
  - Ordeal administrators who change success probabilities do not necessarily fully understand the effects
- Alternative interpretation
  - Not: ordeals are iudicia Dei with some probability.
  - But: the priest may come up with the correct judgement with some probability.



# Conclusions III

Lariviere (personal communication):

“A known rogue might be punished by the court not for the crime he is accused of, but for his long-standing reputation as a bad actor. In that context, the “correct” outcome of an ordeal is not in question. That is, even if a witness in the audience secretly knew that the accused is not guilty of the crime he is being tried for, the fact that the ordeal found him guilty is easily explained by some unknown karmic factors that made him “deserve” to be found guilty and thus punished.”

# Conclusions IV

- Sītā is accused by her husband Rāma who reproaches her of not having been faithful to him during her captivity.
- Pyre put up by Rāma's brother Lakṣmaṇa on Sītā's request and with Rāma's consent.
- Sītā is rescued by divine intervention.
- No “negative consequences for accuser in case of success”.  
Rāma: “Had I not put the innocence of [Sītā] to the test, the people would have said: - ‘Rama, the son of Dasaratha is governed by lust!’ It was well known to me that Sita had never given her heart to another ...”.
- Here: two winners.